Hawai'i Wetland Management Policy

April 1999

Prepared By:

Hawai'i Wetland Management Policy Workgroup

Coordinated by:

Sarah Young
AURA CONSULTING
E-mail aura@hawaii.rr.com

With Support From

State of Hawai'i, Department of Health
Environmental Planning Office
919 Ala Moana Boulevard, Suite 312
Honolulu, Hawaii 96814

Funded by:
United States Environmental Protection Agency
Clean Water Act Section 104 (b)(3)

ACKNOWLEDGEMENT

The first statewide comprehensive wetland management policy has been developed with funding from the United States Environmental Protection Agency through Clean Water Act Section 104(b)(3). The State Department of Health, Environmental Planning Office, through contracting a Wetland Coordinator (WC), Ms. Sarah Young, coordinated the policy-making process by working closely with federal, state, county, developers, planning professionals and conservation groups and by soliciting public participation throughout the planning process in 1998-99. The WC would like to express her gratitude to people who contributed to the formation of this policy, including individuals who participated in the workgroup meetings during the policy-making process:

Federal Agencies

- George Young, Lolly Silva, William B Lennan, Michael Lee, John Emmerson, U. S. Army Corps of Engineers
- Wendy Wiltse, U. S. Environmental Protection Agency, Pacific Islands Contact Office
- Don Palawski, U. S. Fish & Wildlife Service, Pacific Islands Office
- Terrell Kelley, Larry Yamamoto, U. S. Department of Agriculture, Natural Resources Conservation Service
- John Naughton, U. S. Department of Commerce, National Marine Fisheries Service, National Oceanic & Atmospheric Administration
- Katherine Ewel, U. S. Department of Agriculture Forest Service
- Barry Hill, Bill Steiner and Brian Farm, U. S. Geological Survey
- Diane Drigot, U. S. Marine Corps Base Hawaii, Environmental Department (LE), U. S. Navy
- Alvin Char, U. S. Army
- Melvin Kaku and Sandy Maynard, U. S. Navy Pacific Division, Naval Facilities Engineering Command
- Chagi, Roy, U. S. Navy USCINCPAC
- Darrell Robertson, Clyde Yokota, U. S. Navy Naval Base, Pearl Harbor

State Agencies

- Roger Fujioka, John Harrison, University of Hawaii, Water Resources Research Center and Environmental Center
- Janet Ashman, Hawaii Agricultural Research Center
- Steve Olive, Coastal Zone Management Program, Office of Planning, Department of Business, Economic Development and Tourism
- Edward Chen, Department of Health, Clean Water Branch
- Paul Conry, Carol Terry, David Higa, Dean Uyeno, Department of Land and Natural Resources
- Jeyan Thirugnanam, Office of Environmental Quality Control
- Nami Ohtomo and Luis Manrique, Office of Hawaiian Affairs
- Elton Teshima, Steve Kay, Ronald Tsuzuki, Glenn Soma, and Terrence Kearney, Department of Transportation

County Agencies

- Ardis Shaw-Kim, Dana Teramoto, City and County of Honolulu, Department of Planning and Permitting and Alex Ho, Department of Public Works
- Norman Hayashi, County of Hawaii, Planning Department
- Ian Costa, County of Kauai, Planning Department

Private Sector and General Public

- Stephen Kubota, *Ahupua'a* Action Alliance
- Dan Davidson and Tom Schnell, Land Use Research Foundation
- George Atta and Yukie Ohashi, American Planning Association- Hawaii Chapter
- Laure Dillon, *Na Leo Pohai*
- Bill Sager, Conservation Council for Hawaii
- Ray Chuan, Limu Coalition
- Nancy Krauss
- Millie Kim, Hamakua Soil and Water Conservation District
- Wendell Koga, Hawaii Farm Bureau

Special thanks to those who submitted constructive comments to the draft policy and to Nancy Heinrich of Office of Environmental Quality Control; Mr. Philip Moravsik of Water Resources Research Center; Mr. Ray Chuan of Limu Coalition; Shirley Nakamura of Natural Resources Conservation Service; and Stephen Kubota of *Ahupua'a* Action Alliance for helping disseminating the press releases and the January 1999 draft policy through their networks.

Special thanks to Kihei Community and Aquatic Center, Windward Community College, Department of Health, Clean Water Branch, Kauai District Office; and University of Hawaii at Hilo, Cooperative Extension Service for use of their meeting facilities.

Finally, to Dr. June Harrigan-Lum and her staff: Ms. Sharlene Young, Mr. Glen Fukunaga, and Mr. Patrick Felling, of the Environmental Planning Office, and others at the Department of Health for their excellent administrative and technical support.

The cooperation, knowledge, insights and resources shared by these individuals, their organizations and others greatly contributed to the timely compilation of Hawai'i's first statewide comprehensive wetland management policy.

April 1999

LIST OF TERMS DISCUSSED

LIST OF ACRONYMS

ACOE	U.S. Army Corps of Engineers
C&CH	City and County of Honolulu
CRP	Conservation Reserve Program
CWA	Clean Water Act
CWB	Clean Water Branch
CWRM	Commission on Water Resource Management, DLNR
CZM	Coastal Zone Management
CZMA	Coastal Zone Management Act
DBEDT	Department of Business, Economic Development and Tourism
DOH	Department of Health
DLNR	Department of Land and Natural Resources
EPO	Environmental Planning Office
FHA	Federal Highway Administration
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FWCA	Fish and Wildlife Coordination Act
GIS	Geographic Information System
HAR	Hawaii Administrative Rules
HGM	Hydrogeomorphic
HINHP	Hawai'i Natural Heritage Program
HRS	Hawaii Revised Statutes
LG	Lieutenant Governor
MBTA	Migratory Bird Treaty Act
Min.	Minimal
MMPA	Marine Mammal Protection Act
MOA	Memorandum of Agreement
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
OEQC	Office of Environmental Quality Control
OHA	Office of Hawaiian Affairs
RC&D	Resource Conservation and Development
ROH	Revised Ordinance of Honolulu
SHPO	State Historic Preservation Office
SMA	Special Management Area
USDA	U.S. Department of Agriculture
USDT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
USGS	U. S. Geological Survey
WHIP	Wildlife Habitat Incentives Program
WRP	Wetlands Reserve Program

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

EXECUTIVE SUMMARY

Wetlands account for approximately 110 thousand acres of Hawai'i's landscape, spreading across the islands in low-lying coastal areas, elevated lands and forested mountains. Over the past two centuries, an estimated one-third of the coastal wetlands have been lost to development activities. Building interagency and public consensus in Hawai'i on wetland management policy is an essential first step on which future implementation of wetland protection measures depends.

In 1997, a wetland management planning grant was awarded to the Hawai'i State Department of Health (DOH) through federal Clean Water Act (CWA) Section 104(b)(3). DOH convened the Hawai'i Wetland Management Policy Workgroup in April 1998, to develop a consensus-based statewide wetland management policy. Participants included representatives from federal, state, and county agencies and non-governmental groups interested in wetland management issues. This comprehensive and consensus-based policy established a vision and goals for wetland management in Hawai'i. It also provided guidelines for protecting, maintaining, enhancing, restoring, and creating wetlands in Hawai'i through existing administrative channels. This policy strives to improve the effectiveness and efficiency of wetland management, and with the exception of existing legal obligations, the policy is intended for use on a voluntary basis.

The vision for the policy states: *Hawai'i's wetlands shall be integrated into the watershed, or ahupua´a, extending from the uplands to the coastal waters. They shall be preserved, conserved, restored, and created in order to maintain habitat, support species biodiversity, nurture fisheries, control floods, improve water quality, sustain cultural resources and provide scenic vistas.* The vision will be implemented by meeting three wetland management goals. These goals encompass the national net gain policy and reflect the uniqueness of Hawai'i's wetland resources.

The Policy Workgroup developed a generic description of Hawai'i's wetlands**:** *Wetlands contain plants and animals requiring water at or near the soil surface all or part of the time. Wetlands can be found along the coast, in the low-lying plains, along streams, and in forests and mountains. Wetlands may include tidal flats, muliwai or sand bars at the mouths of streams, some anchialine pools, marshes, riparian areas, lakes, ponds, bogs, and taro fields.* Hydrologic processes, biodiversity, and physical and biochemical effects on a global scale are identified as main functions that Hawai'i's wetlands serve. Cultural and economic values associated with these functions are also discussed.

This document reflects the views of a broad range of stakeholders representing all perspectives in wetland management. It contains policy recommendations addressing issues such as public participation, agency/entity roles and responsibilities (including effective and efficient processing of wetland permits/approvals), mitigation/mitigation banking, watershed management, cultural issues, and dispute resolution. The relevancy for issues such as private ownership, stewardship, takings was also discussed. For easy reference, a list of phone and fax numbers for key agencies and entities, a report on public outreach during February and March 1999, responses to comments, and a summary of lessons learned during the policy making process have been provided. The policy along with 12 group memories documenting the policy-making process have been made available through the World Wide Web at http://www.pixi.com/~epo.

I. BACKGROUND

Wetlands account for approximately 110 thousand acres of Hawai'i's landscape, spreading across the islands in low-lying coastal areas, elevated lands and forested mountains. Over the past two centuries, an estimated one-third of the coastal wetlands have been lost to development activities.

Comprehensive management policies must be developed to preserve these vulnerable and valuable resources. Because of a lack of understanding of wetland functions and values, confusion regarding the roles and responsibilities of agencies involved, and a lack of technical expertise in the wetland management area, the State of Hawai'i has not developed a comprehensive wetland management policy. In the past, decisions were often made in a piecemeal and argumentative mode.

In the early 1990s, the State of Hawai'i, Department of Health (DOH) initiated interagency discussions on wetlands planning and policy issues. However, these initial discussions did not produce a coherent, consensus-based statewide wetland management policy. Building interagency and public consensus on wetland management policy is an essential first step on which future implementation of such a policy depends. In 1997, the U.S. Environmental Protection Agency (EPA) provided additional funding through Clean Water Act (CWA) Section 104(b)(3) for continuation of the planning effort, which resulted in the statewide wetland management policy described herein.

II. WORKGROUP ON STATE WETLAND POLICY

Subsequent to grant approval, DOH reconvened the Hawai'i Wetland Management Policy Workgroup in April 1998. The goal of this workgroup was to develop a consensus-based statewide wetland management policy. The workgroup was led by a Wetland Policy Coordinator funded by the grant, and was supported by the DOH, Environmental Planning Office (EPO), which provided technical and administrative assistance.

The workgroup sought the views of a broad range of stakeholders representing all perspectives in wetland management. Participants included representatives from federal, state, and county agencies and non-governmental groups interested in wetland management issues. The Acknowledgement Section lists individuals, groups and agencies represented by the workgroup and Appendix D outlines additional public outreach efforts carried out by the workgroup.

The workgroup began its policy deliberations by establishing both a vision statement and goals for the wetland management policy, then identified a series of topics for discussion. In general, a brainstorming and consensus building session was scheduled for each major topic. Each section of the policy was reviewed as the draft became available. Two rounds of review of the draft policy document were completed prior to a press release issued on February 5, 1999. All working copies were available for public review and access throughout the policy-making process.

III. SCOPE OF THE POLICY

Hawai'i's wetland management policy describes a vision for our wetland resources. The purpose of this comprehensive and consensus-based policy is to provide guidelines for

protecting, maintaining, enhancing, restoring, and creating wetlands in Hawai'i through existing administrative channels and voluntary mechanisms. This policy strives to improve the effectiveness and efficiency of wetland management, which can be achieved by improving public awareness and inter-agency coordination, clarifying roles and responsibilities, identifying gaps in existing programs, and by finding opportunities to improve the coordination of both non-regulatory (voluntary) and regulatory wetland programs.

With the exception of existing legal obligations, the policy is intended for use on a voluntary basis. Agencies and entities are encouraged to sign a letter of support for implementing the policy. The policy will be updated periodically to reflect progress in wetland management over time.

This policy can be used as a guidance document that provides better understanding of the functions and values of wetlands, examines the interrelations of government programs, and identifies permits or approvals required for proposed activities and partnership opportunities in wetland preservation, conservation, restoration and creation. Appendix D also outlines limitations of this policy by listing issues that could not be resolved through this policy making process.

IV. VISION STATEMENT

Hawai'i's wetlands shall be integrated into the watershed, or *ahupua´a*, extending from the uplands to the coastal waters. They shall be preserved, conserved, restored, and created in order to maintain habitat, support species biodiversity, nurture fisheries, control floods, improve water quality, sustain cultural resources and provide scenic vistas.

This vision statement describes the long-term goals for managing wetland resources in the State of Hawai'i. It will help to integrate various efforts of agencies and groups involved in wetland management, ensuring that all programs affecting wetlands work toward similar goals.

The vision encompasses the long-term values expressed in the wetland management policy and establishes a philosophical basis for sustainable use of Hawai'i's wetland resources. It also includes "the long-term goal of increasing the quality and quantity of the Nation's wetlands resource base." known as the national net gain policy (White House, August 24, 1993).

This vision reflects Hawai'i's unique island setting and incorporates the Hawaiian concept of the *ahupua´a* as a resource management unit, similar to a watershed or a drainage basin. In ancient times, this unit allowed a growing native population to survive on limited resources and included taro cultivation, fisheries management and aquaculture. Conventionally, an *ahupua'a* represents "a land division usually extending from the uplands to the sea" (Pukui, M.K. and Elbert, S. H.1986). In certain areas, one *ahupua'a* may include several drainage basins or watersheds, with boundaries differring from those of the watersheds. Nevertheless, in a more modern context and at the policy level, the concepts of *ahupua'a* and watershed are interchangeable.

V. GOALS FOR HAWAI'I WETLAND MANAGEMENT POLICY

A. PROMOTE BETTER UNDERSTANDING OF THE FUNCTIONS AND VALUES OF WETLANDS.

Wetlands are unique ecosystems that are vital to the survival of many fish and other aquatic species, wildlife, plants and invertebrates. Wetlands are also used to conduct Hawaiian traditional and customary practices and are important to native culture. The intense debate within the workgroup over the definition of Hawai'i's wetlands exemplified the many complex issues in wetland management needing resolution in a state policy.

Rather than dwell on formulating specific definitions, a consensus was reached to promote better understanding of the functions and values of wetlands. Regardless of how wetlands are defined and how much they vary in size, complexity, and physical, chemical, and biological characteristics and processes, they share some common hydrologic, soil, and vegetation characteristics and sometimes share similar economic and cultural values.

This goal forms the basis for preserving, conserving, restoring and creating wetland functions and values, and provides support for actions designed to enhance wetland functions and values.

B. PROMOTE THE PRESERVATION, CONSERVATION, RESTORATION AND CREATION OF WETLANDS.

In 1990, the USFWS estimated that Hawai'i had about 15 thousand acres of wetlands remaining in coastal areas. This estimate reflects a 30 percent loss during the past two centuries. The losses are mainly due to urban and uncontrolled agricultural development in the coastal areas, including destruction by fill, stream channelization, drainage, and diversion. Other wetlands have also been degraded by altered hydrology, sedimentation, and invasions of alien species. The preservation, conservation, restoration and creation of wetlands, as well as methods to adequately prevent and mitigate the loss of wetlands from Hawai'i's mountains to the coastal waters, are essential for implementing the vision established for the policy.

C. IMPROVE PUBLIC PARTICIPATION IN WETLAND MANAGEMENT PROCESS.

Wetlands are always part of an ahupua´a, or watershed. A watershed is a dynamic and complex system, and its management requires resources beyond those that government agencies can provide. Thus, building a sense of community and stewardship among land users in the watershed is a vital part of watershed as well as wetland management. Community-based watershed planning efforts will afford opportunities for resource managers to address wetland management problems by using a comprehensive approach and by involving local communities as partners to deal with wetland management challenges.

VI. DESCRIPTION OF WETLANDS

A. DISCUSSION

Definitions from the U.S. Fish and Wildlife Service (USFWS), U.S. Army Corps of Engineers (ACOE), U. S. Department of Agriculture (USDA)/Natural Resources Conservation Service (NRCS), the State DOH and from the City and County of Honolulu (C&CH) were compiled in Table 1. The three other counties have definitions similar to C&CH's. Within these definitions, the following points are notable:

- Agricultural wetlands owned or operated by USDA participants are delineated in accordance with the National Food Security Act Manual (NFSAM), which is similar to ACOE's Wetlands Delineation Manual.
- ACOE 's definition appears to be more restrictive than that of the USFWS. It defines only those wetlands which will be subject to Clean Water Act jurisdiction and which must exhibit all three environmental attributes: wetland hydrology, vegetation, and hydric soil characteristics.
- Wetlands identified by the USFWS' National Wetlands Inventory (NWI) only need to meet one of the above three characteristics.
- The Wetlands Reserve Program, administered by the USDA/NRCS, covers restoration of land adjacent to the wetland of interest when the adjacent land is shown to contribute to wetland functions and values.
- The state and county definitions fit within the framework of the federal definitions. Interestingly, the C&CH definition explicitly includes ponds and mudflats, and excludes certain man-made constructed wetlands.

Historically, federal agencies have used their own sets of definitions for different purposes. Over the years, extensive efforts have been made to establish consistency among federal agencies. In January 1989, an interagency cooperative publication titled *Federal Manual for Identifying and Delineating Jurisdictional Wetlands* was published. Since then, the EPA, USFWS, ACOE, and USDA/NRCS continued their cooperative approach and signed a Memorandum of Agreement (MOA) in 1994. In December 1998, a draft MOA among these agencies clarified that USDA/NRCS will serve as the lead agency for wetland delineation if the proposed activity is agricultural, whereas the ACOE will serve as the lead agency for delineation if the proposed activity is non-agricultural. Although at present, federal agencies have different manuals for delineating and identifying jurisdictional wetlands, their biologists strive to use consistent criteria in the field determinations. Figure 1 illustrates the relationships of these definitions, reflecting the historic perspective and most recent draft MOA. Ultimately, for delineating jurisdictional wetlands, federal agencies are working toward using consistent criteria.

Table 1. Compilation of Existing Definitions for Hawai'i's Wetlands

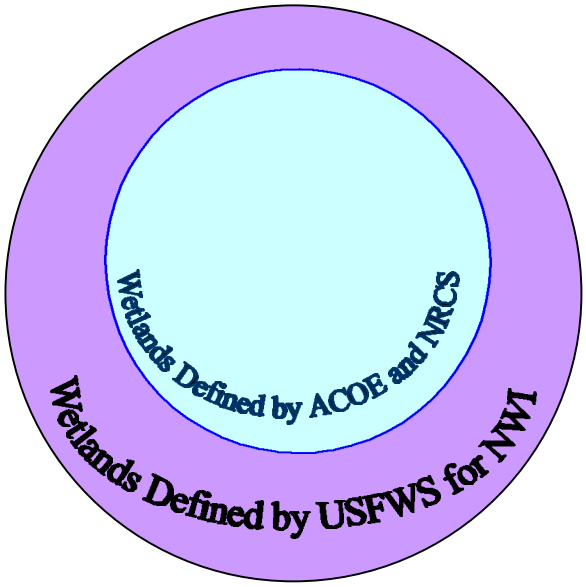
Check with the Respective Agencies for the Latest Version. Appendix B Provides Telephone and Fax Numbers for these Agencies.

Agency	Reference/Regulation	Definition
City and County of Honolulu	Revised Ordinance of Honolulu, Chapter 25, Section 1.3 (March 1994)	"Wetlands" means an area possessing three essential characteristics: 1) hydrophytic vegetation, 2) hydric soil 3) wetland hydrology, as defined in the Corps of Engineers Wetlands Delineation Manual (Jan.1987). Wetlands shall also include ponds and mudflats, which while possessing hydric soils and wetland hydrology, may not have the commonly required hydrophytic vegetation. For the purpose of this chapter, only natural or historic wetlands are included within the protected group of wetlands.
State Department of Health	Hawai'i Administrative Rules Chapter 54, Section 01	Land that is transitional between terrestrial and aquatic ecosystems where the water table is usually at or near the surface or the land is covered by shallow water. A wetland shall have one or more of the following attributes: 1) at least periodically the land supports predominantly undrained hydric soil; 2) the substratum is predominantly undrained hydric soil; or 3) the substratum is non-soil (gravel or rocks) and is at least periodically saturated with water or covered by shallow water. Wetlands may be fresh, brackish, or saline and generally include swamps, marshes, bogs, and associated ponds and pools, mud flats, isolated seasonal ponds, littoral zones of standing waterbodies, and alluvial floodplains. For the purpose of applying for water quality certification under Clean Water Act Section 401, and for National Pollutant Discharge Elimination System (NPDES) permit purposes, the identification and delineation of wetland boundaries shall be done following the procedures described in the U.S. Army Corps of Engineers' Wetlands Delineation Manual (ACOE 1987).
U.S. Fish and Wildlife Service	660 FW 2, Wetlands Classification System (1998), or Classification of Wetlands and Deepwater Habitats of the United States by L.M. Cowardin, V. Carter, etc. 1979 (FWS/OBS-79/31, 131pp.) Federal Manual for Identifying and Delineating Jurisdictional Wetlands (1989)	For National Wetland Inventory, wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification, wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes (plants specifically adapted to live in wetlands); (2) the substrate is predominantly undrained hydric (wetland) soil; and (3) the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season of each year. For identifying and delineating jurisdictional wetlands, wetlands, under normal circumstances have hydrophytic vegetation, hydric soils, and wetland hydrology. This concept appears to be consistent with the U.S. Army Corps of Engineers' definition.
U.S. Army Corps of Engineers and Environmental Protection Agency	1987 Corps of Engineers Wetlands Delineation Manual	Wetlands are areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.
U.S. Department of Agriculture, Natural Resources Conservation Services	Wetland Reserve Program Final Rule (August 14, 1996) & Interim Final Rule for Highly Erodible Land and Wetland Conservation (September 6, 1996)	Wetland means land that: (1) Has a predominance of hydric soils; (2) Is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions; and (3) Does support a prevalence of such vegetation under normal circumstances. A MOA to be signed would make this definition consistent with the ACOE's. For purposes of the Wetland Reserve Program, restoration also includes adjacent lands that contribute to wetland functions and values.

Note: Counties of *Hawai'i, Kaua'i,* and *Mau'i* have wetland definitions similar to City and County of Honolulu's.

Figure 1. Illustration of the Scope of Federal Wetland Definitions in Table 1

The ACOE and NRCS wetland definitions require presence of all three characteristics (hydric soils, hydrology, and hydrophytic plants, while USFWS' wetland definition used in the National Wetland Inventory (NWI) requires only one of the three characteristics.



B. DESCRIPTION OF WETLANDS

Wetlands contain plants and animals requiring water at or near the soil surface all or part of the time. Wetlands can be found along the coast, in the low-lying plains, along streams, and in forests and mountains. Wetlands can include tidal flats, muliwai or sand bars at the mouths of streams, some anchialine pools, marshes, riparian areas, lakes, ponds, bogs, and taro fields.

This broad and generic description of wetlands is consistent with USFWS's definition, uses the NRCS program guidelines, and includes adjacent lands for wetland resources programs. This description also:

- fits the vision established for the policy,
- reflects the unique tropical or subtropical island setting in Hawai'i, showing a wide range of potential wetland locations,
- reflects the complexity of wetland ecosystems, and
- uses plain language.

VII. WETLAND RESOURCES

A. DISCUSSION

Wetland functions are defined as the normal or characteristic activities that take place in wetland ecosystems or, simply put, "the things that wetlands do." Benefits, products, and services resulting from these functions are wetland values (Smith R.D., October 1995). Though efforts have been made to quantify these environmental assets, it is difficult to assign an economic value, for they are not exchanged on the open market, and consequently have no market price. For example, the flood storage function of wetlands provides benefits and services to a watershed as a whole. The presence of flood storage areas in the upper and middle portions of watershed is important in reducing flooding in downstream areas. Flood control would be beneficial to farmers and landowners who work and live in downstream flood-prone areas. However, since flood reduction is not a service exchanged on the open market, it cannot be assigned a value based on market price.

The environmental, cultural, and economic values brought by wetlands should be recognized. The balancing of these benefits, products or values remains a challenge to the landowners, the regulatory communities and the conservation groups.

B. SUMMARY OF WETLAND FUNCTIONS AND VALUES

Wetlands perform a wide variety of functions as a result of their physical, chemical, and biological attributes. Hydrologic processes, biodiversity, aesthetics and physical and biochemical effects on a global scale are identified as the main functions that Hawai'i's wetlands serve. In addition, cultural and economic values are also associated with many of the functions discussed. Though a general list of wetland functions provides a convenient starting point for understanding complex wetland ecosystems, one should keep in mind that not all wetlands perform all functions to the same degree and wetland management requires a balance of environmental, economic and cultural needs. Therefore, it would not be appropriate to evaluate a wetland for all the functions and values on one scale. Table 2 summarizes the major wetland functions and values.

C. ECONOMIC VALUES

As shown in Table 2, wetlands control floods, provide open space, provide opportunities for aesthetic enjoyment, recreation, and for education. They can support wetland crops that are beneficial to wildlife and to farmers engaging in sustainable agricultural and aquacultural practices. Properly managed wetland activities help to either avoid loss of property values or translate into incomes from outdoor recreation activities, educational tours, and harvesting of wetland crops. Though not all of these economic values are quantifiable at present, they should be recognized, especially in Hawai’i, where tourism and agriculture are both important components of the State economy.

Table 2. Summary of Functions and Values of Hawai'i's Wetland Resources*

Wetland Functions		Values Resulting from Wetland Functions	
		On-Site	**Off-site**
Hydrologic Processes	Storage of Surface Water.	Replenish soil moisture, import/export materials, serve as conduit for organisms. Provide habitat and maintain physical and biogeochemical processes.	Reduce downstream peak discharge and volume (control downstream flooding). Reduce dissolved and particulate loading and help maintain and improve water quality.
	Storage of Subsurface Water and Moderation of Groundwater Flow or Discharge.	Maintain biogeochemical processes and habitat.	Recharge aquifers and maintain groundwater storage, base flow, seasonal flow in streams, and surface water temperatures.
	Dissipation of Energy: the reduction of energy in moving water at the land/water interface.	Reduce the impact of storm tides, and waves. Form natural floodways to convey flood from upstream to downstream.	Reduced downstream particulate loading helps to maintain or improve surface water quality.
Biodiversity	Maintenance of Biodiversity: community composition, structure, function or species richness, rarity and genetic diversity.	Maintain habitats for wetland-dependent species and for forestry, agricultural, and fisheries products.	Maintain connectivity between habitat islands for landscape and regional biodiversity.
	Maintenance of habitat for threatened and endangered species.	Provide habitats for endangered and threatened species.	Maintain connectivity between habitat islands for landscape and regional biodiversity.
Effects on a Global Scale	Cycling of Nutrients: the conversion of elements from one form to another through abiotic and biotic processes.	Contribute to the nutrient reserve of the ecosystem.	Reduce downstream nutrient loading to maintain or improve surface water quality, habitat for native species and a healthy coastline and reef.
	Removal of Elements and Compounds: the removal of nutrients, contaminants, or other elements and compounds through burial, incorporation into biomass, or biochemical reactions.	Contribute to the nutrient reserve of the ecosystem. Allow contaminants to be removed, or rendered innocuous.	Reduce downstream particulate loading helps to maintain or improve surface water quality, habitat for native species and a healthy coastline and reef.
	Retention of Particulates: the retention of organic and inorganic particulates through physical processes.	Contribute to the nutrient reserve of the ecosystem.	Reduce downstream particulate loading to maintain or improve surface water quality.
	Export Organic Carbon: the export of dissolved carbon for biogeochemical processes.	Allow decomposition to occur, along with mobilization of particulate organic carbon and metals.	Support aquatic food webs and downstream ecosystem.
Values Unique to Hawai'i	**Culture Values**	Provide aesthetic enjoyment of patterns of hydrology, plant cover, animal use and historic and archeological characteristics, areas for open space, fishing, observing and appreciating wildlife, and educational purposes.	Provide opportunities to appreciate wetlands and associated archeological or historical features.
		Provide areas for historic sites, archaeological sites, and for conducting traditional and cultural practices.	Help preserve and maintain traditional lifestyle and historic, archaeological, and culture values.
	Economic Values	Provide areas for flood control, outdoor recreation, wetland crops and for fish and prawn production.	Promote sustainable uses of wetland resources.

Note: * This table is compiled from Smith, R. D. (October 1995), please keep in mind that not all wetlands perform all functions to the same degree. **Culture and economic values of Hawai'i's wetlands transcend functions listed in this table. Additional discussion is provided in Sections VII.C and D.

D. CULTURAL VALUES

i. Discussion and Summary of Cultural Values of Hawai'i's Wetlands

Conducting traditional and customary practices for subsistence, cultural and religious purposes should be recognized in wetland management. Discussions of cultural values of wetland resources can get very complex; nevertheless, some simple discussions can help people to relate to these unique resources, and to address cultural concerns with increased awareness and greater sensitivity. Though not comprehensive, the following comments summarize the workgroup's understanding of the cultural issues surrounding wetlands:

- Wetlands may be used to conduct Hawaiian traditional and customary practices for subsistence, cultural, and religious purposes.
- As in many other cultures, the native culture evolves as the environment and the needs of the Hawaiians and local people change. The uses of wetlands evolve over time, and can vary from *ahupua´a* to *ahupua´a*.

ii. Examples of Cultural Values of Certain Wetland Types

Both natural and artificial wetland types are of interest to Hawaiians and other cultural practitioners. These wetlands may be found in various locations in a watershed or *ahupua´a*. While cultural values of wetlands can be found in many wetlands in various locations, for illustration purposes, two examples are discussed:

- Taro Fields *(Lo'i Kalo)*, as ecosystems, are basic to Hawaiians conducting their traditional and customary practices for subsistence, cultural and religious purposes. Taro is a symbol of cultural identity for Hawaiians. The way people interact with others in taro fields reflects interpersonal interactions in the Hawaiian community. Taro fields provide sustenance, recreational, and wildlife benefits, sites for family and community gatherings and interactions, and opportunities for developing partnerships for taro cultivation and wildlife habitat management.
- Anchialine Pools or Ponds can be of cultural value as a place for gatheringôpae, which is used as food and bait for fishing. Ancient Hawaiian settlements were often associated with anchialine pools. Small pools were used as gathering places, in addition to providing water for bathing; larger pools were often adapted for fish culture. Additionally, as these ponds mature and develop edges that have wetland characteristics, wetland vegetation important to the Hawaiians grows. An example is the native sedge *makaloa*, which was highly valued as a weaving/matting material. Also, on the island of Hawai'i, ponds like *Luahinewai* were famous as recreational bathing spots for *ali'i*, or chiefs, who journeyed along the dry leeward coasts. Locations of spring sources and anchialine ponds often defined the pattern of settlement in arid areas.

VIII. MANAGEMENT POLICIES

Management policies and summaries of discussions on public participation, roles and responsibilities of various programs and initiatives, mitigation/mitigation banking, watershed management, cultural issues, private ownership/stewardship/takings, and on dispute resolution are presented.

A. PUBLIC PARTICIPATION

i. Policy

Encourage public participation to the maximum extent practical in wetland management decisions. Utilize a wide range of tools to engage the general public and local community groups. Administrative strategies include:

- Identifying the appropriate public issues of concern and providing early access to information regarding upcoming decisions and issues;
- Informing and educating the public regarding the issues of concern, and the procedures to address these concerns; alerting the public to problem areas and working with them in devising solutions;
- Developing effective and community-sensitive outreach efforts and encouraging the use of plain language to communicate with the public;
- Exercising flexibility and providing multiple communication mechanisms such as mail, telephone, fax, e-mail, internet websites, and interagency or community meetings; and
- Defining clear and appropriate lines of communication and timelines for decision making.

ii. Benefits of Public Participation

Public participation is beneficial to all parties involved, and existing rules and regulations in most programs and entities specify the appropriate administrative processes. The benefits of carrying out a comprehensive public participation process include:

- Building trust among parties involved in the decision-making process;
- Building understanding among diverse interests. A broad dialogue can clarify goals and expectations, leading to consensus;
- Providing access to a broad range of expertise, experiences and perspectives;
- Establishing a clear public decision making process by specifying the scope, timing and method of public input; and
- Optimizing the potential for broadly accepted decisions that are easy to implement.

B. ROLES AND RESPONSIBILITIES OF AGENCIES/ENTITIES WITH WETLAND MANAGEMENT PROGRAMS OR INITIATIVES

i. Agencies and Entities with Interests in Wetland Management

Many federal, state and county agencies carry out wetland management responsibilities in Hawai'i. Wetland conservation is also of interest to many private entities. Though the roles and responsibilities of these agencies or entities may change over time, it is important to understand their basic roles and responsibilities in wetland management.

Discussions of roles and responsibilities were centered on: general policy for promoting better understanding of these roles and responsibilities; and specific policy for effective and efficient permit processing.

ii. General Policy

a. Encourage a cooperative approach in wetland management.

Agencies or entities with an interest in wetland management should clarify their roles and responsibilities and work together to conserve wetland resources. A general framework for understanding the roles and responsibilities of all agencies and entities was established. The workgroup identified five general categories for agencies and entities. Table 3 outlines these categories and provides examples for each category.

A lead state agency with adequate resources is recommended for promoting voluntary implementation of the policy. Such an agency would fund a state coordinator to facilitate interagency and private-public partnership efforts in wetland management.

b. Encourage integrating wetland conservation into regional and statewide planning.

Wetlands should be identified as valuable resources for the purposes of regional land use planning, e.g., state land use district boundary review, coastal zone management, recreation, capital improvement, county general plans, community plans and zoning plans, etc.

c. Encourage private landowners and the public to become involved in wetland resources management.

Wetland management requires both financial and technical resources. Partnerships with private landowners to preserve wetlands will benefit these vulnerable ecosystems. On the other hand, by increasing awareness of the incentives and technical assistance programs that government agencies can provide, private landowners and the public can maximize parternership opportunities for wetland management activities.

d. Provide training for wetland managers, technical staff, developers, private landowners and others to implement wetlands management measures.

Training programs will allow interested parties to get hands-on experience in evaluating wetland resources. These programs will provide the basis for developing site-specific strategies for wetland preservation, enhancement or other mitigation measures.

Table 3. Categories of Agencies and Entities With Interests in Wetland Management

Categories	Examples of Agencies and Entities
Agencies with Regulatory Oversight	U.S. Environmental Protection Agency (EPA)
	U.S. Army Corps of Engineers (ACOE)
	U.S. Fish and Wildlife Service (USFWS)
	National Marine Fisheries Service (NMFS)
	U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS)
	National Park Service (NPS)
	Department of Land and Natural Resources (DLNR)
	DOH, Clean Water Branch (CWB)
	DBEDT, Office of Planning, Coastal Zone Management (CZM) Program and State Land Use Commission
	Office of Environmental Quality Control (OEQC)
	City and County Permitting or Planning Agencies
Agencies with Financial Incentive Programs	USDA, NRCS
	EPA
	USFWS
	Office of Hawaiian Affairs (OHA)
	DLNR
	Private Foundations and Organizations
Entities with Research and Technical Assistance Capacity	USDA, Forest Service
	USDA, NRCS
	ACOE, Planning Assistance
	USFWS, Division of Ecological Services
	U.S. Geological Survey (USGS), Water Resources Division and Biological Survey Division
	University of Hawai'i at *Mânoa*, Environmental Center
	DBEDT, Office of Planning and State Land Use Commission
	Office of Hawaiian Affairs (OHA)
	Secretariat of Conservation Biology
	Hanalei Heritage River Program
Agencies Managing Wetlands on Publicly-Owned Lands	Logistics-Security Assistance Directorate, Facilities Engineering Division, HQ U.S. CINCPAC
	U.S. Army Schofield Barracks, U.S. Air Force, 15th Air Base Wing, Environmental Flight
	U.S. Navy, Commander, Naval Base, Pearl Harbor, Facilities and Environment Department
	Marine Corps Base Hawai'i *Kâne'ohe*, Commanding General, Environmental Department (LE)
	U.S. Department of Transportation (USDT), Federal Highway Administration (FHA)
	State Department of Transportation (DOT)
	DLNR
	USFWS, Hawaiian/Pacific National Wildlife Refuge Complex
Groups with Interests in Wetlands Conservation	*Ahupua´ a* Action Alliance
	Ducks Unlimited, Inc.
	Nene O Moloka`i
	Protect *Kohanaiki Ohana*
	Kawai Nui Heritage Foundation
	Sierra Club of Hawai'i
	'Ahahui Malama I Ka Lokahi
	Conservation Council of Hawai'i

Note: This categorization is neither absolute nor complete. Certain agencies or entities may fit into more than one category.

iii. Effective and Efficient Processing of Wetland-Related Permits or Approvals

a. Background

Elimination or reduction of any legal obligations under the regulatory framework can only be achieved through legislative reforms at the federal, state and county levels and through improving internal government procedures conducted by the agencies. In December 1998, the State of Hawai'i, Legislative Reference Bureau (LRB) completed a study for streamlining and eliminating duplicative regulations regarding proposed use projects in Waikiki area (Rosen, M.; December 1998). The report analyzed in detail the federal, state and county laws that may also be applicable to wetland management and outlined techniques for streamlining that can be modeled after the Waikiki project for wetland-related activities in other parts of the state. Similarly, numerous permits or approvals may be required for work in wetlands, such as excavation or filling. Building on LRB's research, the workgroup identified four major challenges associated with wetland permitting processes in Table 4 and focused discussions on strategies to improve the effectiveness and efficiency of the existing regulatory framework.

Challenges to effective and efficient permit processing originate not only from government agencies, but also from the applicants and general public, including those groups with conservation interests. Vigilant efforts are required from all parties involved to simplify the application processes and the agencies' internal and public review processes without harming wetland resources. After extensive discussions, consensus was reached on three objectives. Policies specific to permit processing have been developed to serve these objectives.

b. Objectives

- Achieve better management of Hawai'i's vulnerable and valuable wetlands without lowering regulatory standards.
- Maximize the effectiveness and efficiency of existing regulatory programs.
- Help the applicant and the public to work with the regulatory agencies to achieve environmentally-sensitive development.

c. Policy

Promote better understanding of the roles and responsibilities of agencies with wetland permits or approval programs.

To facilitate such an understanding, a flow chart was developed for wetland-related permits and approvals (Figure 2). The intent of this chart is to help wetland managers and other interested parties better plan wetland-related activities and to show the key players in the regulatory and approval processes. This flowchart does not include any details on each agency's criteria and individual processes. It should be noted that although ACOE and NRCS make decisions on how wetlands are delineated, they often rely on the applicant to hire a qualified wetland delineator to conduct detailed studies for initial site work. Table 5 depicts applicable laws and regulations and key responsibilities of each agency.

Table 4. Challenges and Policies for Effective and Efficient Processing of Wetland-Related Permits/Approvals in Hawai'i*

Challenges	Policies and Strategies For		
	Applicant	**Governmental Agencies**	**Concerned Citizens**
Lack of knowledge of the environmental regulatory programs and of agency responsibilities	Attain basic understanding of the roles and responsibilities of various agencies. Network with agencies to be alerted with new regulations and programs. Participate in wetland or watershed management workgroups and training programs.	Provide funding for a state-lead agency or a coordinator to take on the many tasks discussed below. Provide funding to educate the public regarding wetland regulatory and enforcement programs. Develop standard answers to the most frequently asked questions.	Take the initiative to become educated and understand which agency addresses what issues. For example, send your comments on water quality issues to Clean Water Branch (CWB), not to State Historic Preservation Office (SHPO). Develop a list of concerns associated with wetland management in Hawai'i and distribute it to government agencies.
	Identify all permits/approvals required up front.	Periodically update the Hawai'i Wetland Management Policy, particularly the flowchart for wetland-related governmental review processes and the matrix for agency roles and responsibilities.	Take the initiative to check with agencies on the latest changes. Make a commitment to seek opportunities to become involved in policy-making processes.
	Initiate consultations directly with agencies involved and ask government agencies for a pre-consultation meeting	Provide best professional advice during pre-application consultation processes.	Express concerns in writing on specific projects to the appropriate governmental agencies.
	Determine the critical path for project planning.	To the extent possible, assist the applicant in project planning.	Obtain a potential project timeline from the governmental agencies.
	Document decisions made by the various agencies and give the agency a reasonable timeline for clarification, if needed.	Review preliminary decision documents provided by the applicant and clarify areas of concern in a timely manner.	Obtain preliminary decision documents and provide input to governmental agencies in a timely manner.

(Table 4, Continued on the Next Page)

(Table 4, Continued)

Challenges	Policies/Strategies For		
	Applicant	**Governmental Agencies**	**Concerned Citizens**
Numerous application forms for one project and lack of a coordinated comprehensive review	Use EA/EIS framework as a planning tool and use a master matrix for information gathering and tracking.	Fund a state coordinator or conduct workshops to provide guidance on how to use these forms and help applicants decide when it would be appropriate to consolidate information on fewer forms. Allow applicants to cross-reference EA/EIS documents.	Provide the Wetland Coordinator (or future Lead Agency or Permit Coordinator) with suggestions to refine the master list.
	For projects that are exempted or not covered under NEPA or the Chapter 343 Environmental Review process, merge information requirements into a master list and have a comprehensive review of the project up front. Alternatively, prepare an EA/EIS for information gathering on a voluntary basis.	Whenever possible, allow a master application form to be used in lieu of individual agency forms. On a case-by-case basis, allow agency forms to be consolidated, publishing joint public notices, extending review periods and holding joint hearings whenever possible.	Provide the Wetland Coordinator (or future Lead Agency or Permit Coordinator) with suggestions to refine the master list.
Uncertainties and redundancies associated with regulatory /public review processes	Periodically follow-up with the agencies. Provide documentation for the follow-up efforts. Provide support for public outreach efforts.	Establish clear timelines and consistent criteria for internal agency evaluation. Establish and update a comprehensive mailing list for public outreach. Increase the effectiveness of public outreach mechanisms.	Get your name or group on the mailing lists of the respective agencies or entities. Contact the agencies for project information, as appropriate.
Lack of a wetland database and lack of data on cumulative effects	Provide support to develop a wetland database by sharing existing data, coordinating the format of future data collection, providing technical support and by referring to potential information sources.	Provide funding or allocate resources to develop a wetland database.	Provide support for wetland database development processes by sharing existing data, coordinating the format of future data collection, providing technical support and referring to potential information sources.

Note: * Other streamlining techniques are discussed in *Waikiki Developments: Streamlining the Regulatory Process* by Rosen, M. December 1998. In addition, the Lieutenant Governor's Office also initiated a *Slice Waste and Tape* project aimed at eliminating and reducing duplicative and obsolete state regulations.

Figure 2. A Flowchart for Wetland-Related Permits or Approvals in Hawai'i

Note: (a) See Page iii for notes on acronyms used. (b) Consult respective agencies for details on program applicability for the project and the application processes. (c) Other agencies may occasionally be involved (d) See Appendix B for telephone and fax numbers of the respective agencies.

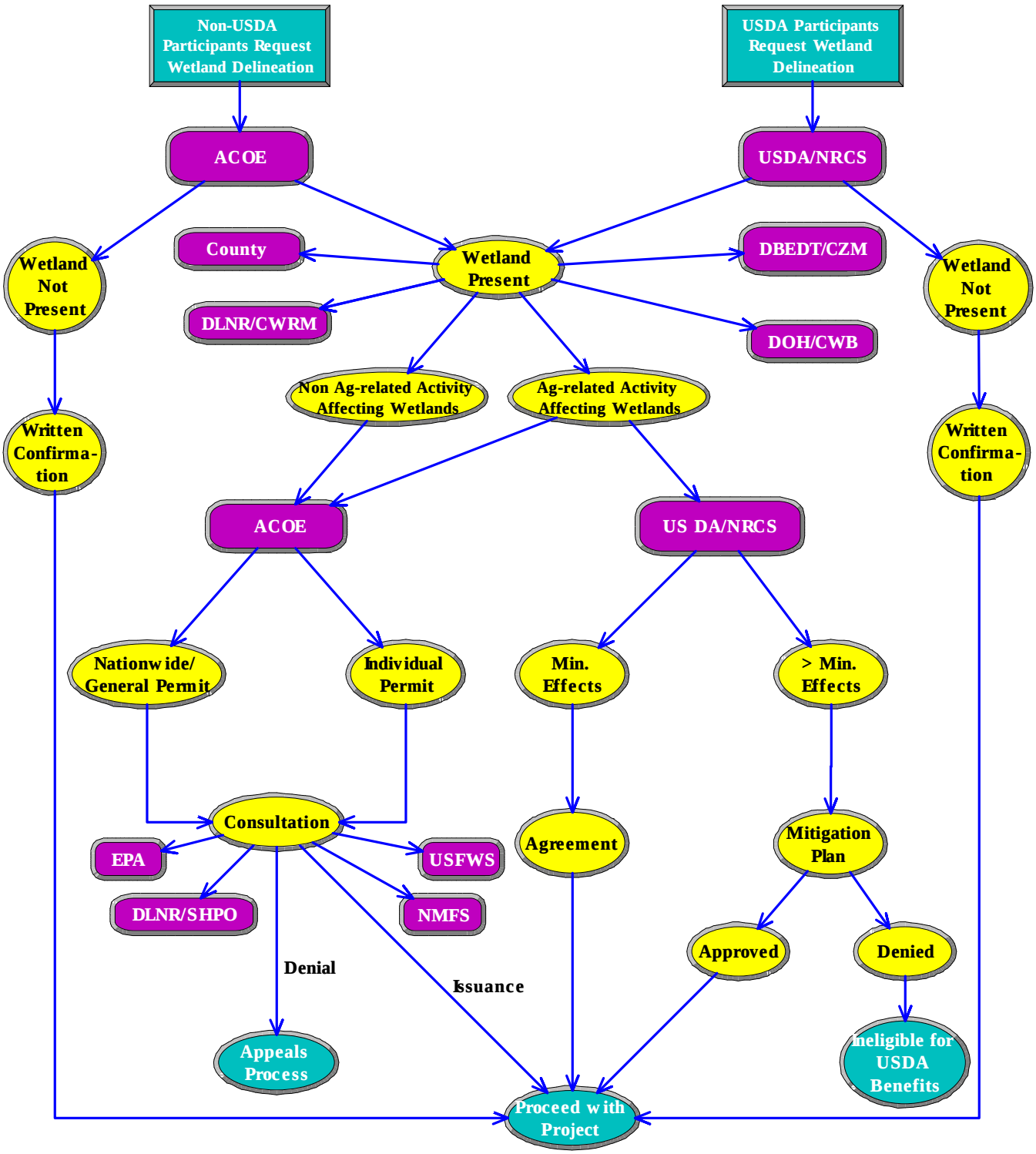


Table 5. Applicable Laws, Regulations and Responsibilities of Key Agencies In Wetland-Related Permits /Approvals.

While efforts will be made to keep this table current, the applicant or interested parties should consult with the appropriate agencies to find out if changes have occurred.

Governmental Agencies		Key Laws	Regulations/Policies/Programs	Key Responsibilities for Wetland-Related Activities
Federal[1]	U.S Army Corps of Engineer(ACOE)	Section 404 of Clean Water Act, Section 10 of Rivers and Harbors Act, and National Environmental Policy Act (NEPA).	33 Code of Federal Regulations (CFR), Parts 320 through 330, 40 CFR Parts 22, and 230 through 232.	Delineate wetlands for non-USDA participants. Administer the wetland permitting and enforcement programs. Lead formal consultations with other agencies. Participate in statewide wetland policy planning and mitigation banking activities.
	U.S Fish and Wildlife Service (USFWS)	Fish and Wildlife Coordination Act (FWCA), Migratory Bird Treaty Act (MBTA), Endangered Species Act (ESA), and NEPA.	40 CFR 1508.20, USFWS Mitigation Policy; (46 FR 7644 to 7663, 1981)	Implement or enforce FWCA, MBTA, and ESA. Provide expertise in fish and wildlife ecology and habitat restoration. Evaluate the effect on federally listed species resulted from potential permit activities. Provide technical assistance and advice to ACOE and NRCS in wetland-related decision-making processes.
	National Marine Fisheries Service	Marine Mammal Protection Act (MMPA), Endangered Species Act (ESA), and NEPA.	Habitat Protection Policy	Enforce MMPA, specifically protect humpback whales, monk seals, green sea turtles, etc., and preserve near-shore or other aquatic habitat for living marine, estuarine, or anadromous resources, particularly estuarine-dependent commercial fish species such as mullet, milk fish, shrimp, and the nehu, a anchovy used as live bait in the pole- and -line skip-jack tuna fishery.
	U.S. Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS)	Executive Order 11990. Wetlands Protection Policy, NEPA, Farm Bill/Food Security Act.	Wildlife Habitat Incentives Program (WHIP), Conservation Reserve Program (CRP), Wetlands Reserve Program (WRP). The Food Security Act Manual.	Delineate agricultural wetlands or other wetlands for USDA participants. Provide technical assistance to those involved in land conservation and planning and wetland restoration and enhancement. Manage incentives programs such as WHIP, WRP, CRP, the Resource Conservation and Development Program (RC&D), and Small Watersheds Program (PL-566).
	U.S. Environmental Protection Agency (EPA)	Federal Clean Water Act, NEPA and Section 404 of CWA	40 CFR Parts 22, and 230 through 233.	Oversee U.S. Army of Corps of Engineers regulatory activities pertaining to wetland protection. Provide ultimate authority to determine the geographic scope of U.S. waters including wetlands. Develop rules to regulate discharges to wetlands. Engage in watershed planning.
State	Department of Business, Economic Development and Tourism (DBEDT), Coastal Zone Management (CZM) Program	Section 6217 of Coastal Zone Management Act (CZMA) Reauthorization and Amendments, Hawai'i Revised Statutes (HRS) Chapters 205A	CZM 307 (c) has federal consistency provisions	Lead agency for management of coastal resources. It provides a framework for the existing structure of land and water use controls and provides federal consistency determinations for wetland-related activities. It also coordinates with other agencies in the CZM program network to ensure that the objectives and policies of HRS Chapter 205A are followed.
	DBEDT, State Land Use Commission[2]	HRS Chapter 205		Lead agency for reviewing the Hawaii state plan, county general plans, and county development and community plans, initiating state land use amendments as appropriate and developing state land use district boundary reviews for each county.
	Dept. of Land and Natural Resources (DLNR), State Historic Preservation Office	Section 106 National Historic Preservation Act		Lead agency for determining the significance of archaeological and historical features in a wetland and providing advice on mitigative measures for preserving such features.

(Table 5, Continued on Next Page)

(Table 5 Continued)

Governmental Agencies		Key Laws	Regulations/Policies/Programs	Key Responsibilities for Wetland-Related Activities
State	State Department of Health, Clean Water Branch	Sections 401 and 402 of Clean Water Act and HRS Chapter 342D	Hawai'i Administrative Rules (HAR) Chapters 11-54 and 11-55	Lead agency for water quality certification and processing and enforcing National Pollutant Discharge Elimination System (NPDES) permits and providing technical expertise and advice on implementing pollution control measures in wetlands.
	DLNR, Commission on Water Resource Management(CWRM)	HRS Chapter 174C	HAR Chapters 168 and 169	Process and enforce stream channel alteration permits, stream diversion works alteration permits, and amendments to the interim in-stream flow standards.
	DLNR, Land Division	HRS Chapter 183C	HAR Chapter 13-5	Manage and regulate wetland activities in conservation districts and their use permits.
	DLNR, Division of Aquatic Resources	HRS Chapters 190 and 188-53	HAR Chapters 28 through 37, 47 through 60.3, and 61 through 64	Administer the wetland activities in state Marine Life Conservation District, Marine and Freshwater Fisheries Management Areas. Provide expertise in fisheries and aquatic habitat management.
	DLNR/Division of Forestry and Wildlife	HRS Chapters 195D/183D	HAR Chapter 124	Administer state laws for endangered species and protected wildlife. Provide expertise in wildlife and habitat management. Provide technical assistance to agencies and the public.
	Office of Environmental Quality Control	HRS Chapter 343	HAR Chapter 11-200	Implements environmental review process in the State. Requires disclosure of environmental consequences for certain projects
County[3]	City & County of Honolulu, Department of Permitting and Planning	6217 CZMA, HRS Chapters 343 and 205A	Chapter 25, R.O.H,	Lead agency for implementing Special Management Area (SMA) programs on Oahu. Determine exemptions, minor or major permits needed for work within wetlands in the special management area.
	County of Hawai'i, Planning Department	6217 CZMA, HRS Chapters 343 and 205A	Rule 9. SMA Rules and Regulations of the County of Hawai'i	Lead agency for implementing Section 6217 of the CZM Act in County of Hawai'i. Determine exemptions, minor or major permits needed for work within wetlands in the special management area.
	County of Kauai, Planning Department	6217 CZMA, HRS Chapters 343 and 205A		Lead agency for implementing Section 6217 of the CZM Act in County of Kauai. Determine exemptions, minor or major permits needed for work within wetlands in the special management area.
	County of Maui, Planning Department	6217 CZMA, HRS Chapters 343 and 205A		Lead agency for implementing Section 6217 of the CZM Act in County of Maui. Determine exemptions, minor or major permits needed for work within wetlands in the special management area.

Note: [1] Other federal agencies, such as the U.S. Geological Survey, U.S. Department of Transportation, and the military, also participate in wetland-related activities. Though some of these agencies provide research, education or public outreach for wetland activities, their roles in the wetland permitting/approval processes are quite limited.

[2] This agency does not issue permits or approvals directly. It can affect permit decisions through state land use district boundary review processes. Wetlands can be reclassified into Conservation District in this process.

[3] Counties also issue grubbing and grading permits that may be needed for wetland fill and or excavation activities.

Encourage cooperation among the applicant, government agencies, the general public, and groups with conservation interests throughout project planning and implementation.

Cooperation from all parties involved will be crucial for effective permit processing and for timely implementation of wetland restoration projects. Policies and strategies are tailored for three major groups: government agencies, applicants for permits or approvals, and concerned citizens, as outlined in Table 4. It is also recognized that:

- Pros and cons for each policy/strategy considered should be evaluated before implementation, particularly for meeting the challenges associated with modifying application forms,
- The potential for conflicts of interest should be considered in choosing a lead agency or permit coordinator. A government agency or position would best serve the purpose.
- The review process involves three levels of evaluation: one by the agency staff, one by other agencies involved in wetland management, and another by the public. Public outreach efforts have been improved over the years; comprehensive mailing lists have been established in most agencies involved in wetland projects.
- Monitoring requirements and mitigative measures will be enforced through the authority of each regulatory agency or through litigation.

C. MITIGATION/MITIGATION BANKING

i. Discussion

Wetland acreage has declined and even small wetlands may have functions and values that cannot be replaced. Efforts should be made to maintain or increase wetland acreage in the state. This policy adopts the federal three-step sequence approach (avoidance, minimization, and compensation) and be prudent on accepting compensatory mitigation. Mitigation banking, as one form of compsensatory mitigation, should be considered the last resort relative to the avoidance and minimization options.

ii. Policy

a. Encourage wetland preservation and conservation. Compensatory mitigation(wetland restoration or creation) should compensate for unavoidable adverse impacts that remain after all appropriate and practicable avoidance and minimization have been accomplished. On-site and in-kind compensatory measures are preferred to off-site and out-of-kind measures.

Avoidance and minimization should be sought before considering compensatory mitigation. In the Section 404 permitting process, the ACOE is required to follow a three-step sequence, as specified in a 1989 Memorandum of Agreement between the COE and the EPA. This sequence ensures that a project applicant has taken appropriate and practical measures to offset avoidable impacts to wetlands:

- Avoidance - examine all practical alternative sites that avoid or have less adverse impacts on wetlands. Avoidance of impacts is not limited to denying authorization to a proposed project or alternative, and may include physically reconfiguring, realigning, or resizing a project to avoid impacting wetlands.

- Minimization - require that appropriate and practical measures be taken to minimize the remaining unavoidable adverse impacts.
- Compensation- require that appropriate and practical actions be taken to compensate for unavoidable adverse impacts. Different approaches have been taken to satisfy this requirement. Compensatory mitigation should follow a hierarchy of on-site, off-site in region or watershed, off-site out of region or watershed. When off-site mitigation could produce greater benefits, an analysis should be conducted to assess the significance of such benefits. In determining compensatory mitigation, the wetland functional values lost by the project must be considered. Generally, in-kind compensatory mitigation, meaning that the same type of wetlands, should be created or restored as the one impacted, is preferable to out-of-kind. Recognizing the continued uncertainty regarding the success of wetland creation and other habitat development, careful consideration should be given to the likelihood of success of each mitigation project. Such likelihood should be assessed on a case-by-case basis through research, consultation and negotiation with the regulatory agencies.

b. Establish mitigation procedures, including mitigation banking strategies to allow the use of off-site mitigation techniques. Off-site mitigation techniques may include a mitigation banking approach as compensatory mitigation to replace the loss of small, fragmented wetlands. This approach will allow proponents of unavoidable wetland fills to improve high priority wetlands or to buy credits in pre-established mitigation sites or banks.

This policy stresses use of the sequencing requirements before the mitigation banking option is pursued. It will allow use of mitigation banking to offset losses only for unproductive or lower value wetlands, but not for productive or high value wetlands, such as Kawainui Marsh, some anchialine ponds, montane bogs, etc. Formation of partnerships with landowners or developers to set up mitigation banks is an option to be considered in pursuing mitigation banking. The feasibility of such an option must be discussed among the entities involved.

c. Stipulate periodic assessment and long-term maintenance of the mitigated wetlands in federal, state, or county permit conditions.

Mitigated wetlands need to be monitored for the successes or failures of measures implemented. Every effort should be made to ensure the success of the mitigative measures implemented. Should the measures found to be a failure, modifications should be made promptly to minimize the loss of wetland functions and values. Successes and failures should be documented so lessons learned can be transferred to other projects.

d. Support the formation of a technical assistance group for wetland mitigation, led by a state agency.

A technical assistance group may be formed to assist applicants to develop effective mitigation plans for wetland mitigation projects and to avoid repeated failure of mitigation projects.

The group should be technical in nature and be an integral part of the permit review process. It should work closely with the applicant, the regulatory agency staff to review the mitigation plans proposed, recommend measures for improvements, oversee the implementation, and periodically assess mitigated wetlands. The group should also

document the failures and successes of mitigation plans and disseminate the information to relevant parties to improve the likelihood of success for future mitigation projects.

D. WATERSHED MANAGEMENT

i. Discussion

A watershed, also called a drainage basin, is the area in which all water, sediments, and dissolved materials flow or drain from mountains to the sea. In Hawai'i, a watershed may include one or more *ahupua´a*. The workgroup recognizes that the boundaries for an *ahupua´a* are not always consistent with the boundaries of a watershed. Nevertheless, in the context of this discussion, the concepts of these two words are used interchangeably.

The watershed management approach is characterized as being action oriented, driven by broad environmental objectives, and involving key stakeholders. The three major cornerstones of the watershed protection approach are:

- Problem identification - Identify the primary threats to human and ecosystem health within the watershed.
- Stakeholder involvement - Involve the people most likely to be concerned or most able to take action.
- Integrated actions - Take corrective actions in a comprehensive, integrated manner once solutions are determined. Evaluate success and refine actions, as necessary.

Watershed management has been initiated throughout the state. Projects such as the Coastal Nonpoint Pollution Control Program, the Unified Watershed Assessment Project, the West Maui and Ala Wai Watershed Projects, the Hawai'i Source Water Assessment Program, Hanalei Heritage River Program, and the Watershed Health and Water Quality Project for Marine Corps Base Hawai'i have provided insights on how to use watershed management approaches at the local level.

ii. Policy

Wetlands are interconnected with their surrounding lands, waters, and communities. Therefore, wetland management entails assessments of each of these components and attention to their interactions. The following points describe some of the specifics of the watershed management policy:

a. Develop procedures for evaluating the functions and values of Hawai'i's wetlands.

Hawai'i's wetlands differ in many ways from those found in the continental states, primarily because of the islands' small sizes, relatively steep topography, volcanic soil geomorphology, and climates ranging from tropical to montane. Hawai'i tends to have fewer lakes and deep ponds, and contains unique ecosystems such as anchialine ponds, muliwai, and taro *lo'i*. The unique island setting requires that procedures be developed to reflect strategies to deal with special management challenges in Hawai'i's wetlands.

Evaluation procedures will incorporate the regional hydrogeomorphic (HGM) approach to wetland functional assessments. This approach was intended to improve analytical tools for use in conducting impact analysis and to determine appropriate and effective mitigation measures. The basic presumption is that wetlands can be classified based on their positions

in the landscape (geomorphology), water source (hydrology), and water fluctuation (hydrodynamics). USDA/ NRCS has initiated an interagency effort to develop regional HGM models for conserving wetlands in farmlands. NRCS models can be used for developing similar procedures for wetlands located on non-agricultural lands.

b. Establish a geographic information system (GIS) -based database in Hawai'i, including a wetland inventory, for compiling and storing information gathered using established procedures.

The federal Clean Water Action Plan advocates the use of GIS-based databases for wetland and watershed management. A GIS-based system should incorporate the HGM approach. Whenever possible, the system should be able to integrate chemical/physical/biological data when they become available. Presently, the USFWS, the Hawai'i Natural Heritage Program (HINHP)(a non-profit affiliate of The Nature Conservancy of Hawai'i), and NRCS are the three major sources of databases related to wetlands in Hawai'i. However, these databases are not comprehensive for wetland management purposes. The following summarizes the information each database provides and notes their limitations:

- The USFWS developed a National Wetland Inventory using its own wetland classification system. The wetland map series for Hawai'i consists of 125 maps (11 for Kauai, 15 for Oahu, five for Molokai, 17 for Maui, 74 for Hawai'i, and three (3) for the northwestern islands. The information is mainly used by USFWS for habitat preservation purposes and contains boundaries digitized from mylar National Wetland Inventory Maps developed in 1978.
- HINHP compiles and maintains detailed and comprehensive information on Hawai'i's rarest biological resources. Its mission is to synthesize, interpret, and distribute this information to a wide set of appropriate users, thus making a positive impact on biodiversity protection. The HINHP database is the State's largest computerized inventory of endangered, threatened, and rare plants, animals, and ecosystems, extracted from all available sources. It includes detailed information on more than 1,000 native species and ecosystem types in nearly 10,000 locations across the state. Though not geared toward storing data specifically on wetland functions and values, the HINHP database is an important tool for keeping abreast of rapid environmental changes in Hawai'i. The database is privately maintained; an application must be submitted and approved before access to the information is authorized, and user fees are charged.
- Soil Survey Maps. The NRCS has mapped all soils in the Hawaiian islands and is currently transferring hard copy maps to a GIS layer. The soil surveys include detailed descriptions of each soil type. NRCS also has a list of hydric soils and a table for use when determining whether non-hydric soils would have probable or improbable wetland soil inclusions. These data were used by USFWS in developing the National Wetland Inventory.

Other agencies use these data for their own purposes. For example, the DBEDT Office of Planning keeps both the NWI and NRCS maps on the State GIS system. Both these resources were utilized during the 1992 State Land Use District Boundary Review. The

boundary review study reports locations of important wetlands statewide.

c. Develop a comprehensive mechanism for disseminating information

For effective and efficient use of a database, all conventional and modern means of communication should be explored. Mailing, faxing, a website and other networking mechanisms should all be part of the process.

d. Prioritize wetlands and identify or develop effective and efficient mechanisms for preservation efforts.

Over 110 thousand acres of wetlands are known to exist in Hawai'i. To preserve these resources, priority wetlands and their associated watersheds should be identified on an on-going basis using appropriate evaluation methods. Once identified, specific regulatory or voluntary mechanisms for preservation efforts should be developed. Research on appropriate evaluation methods and conservation techniques should be encouraged, especially in prioritized wetlands for which funding may be available.

E. CULTURAL ISSUES

- **Encourage consultation with Hawaiians and other cultural practitioners on the cultural significance for wetlands of interest, following the Guidelines for Assessing Cultural Impacts (OEQC, Nov. 17, 1997).**
- **Encourage the establishment of a *kupuna* and traditional knowledge database (both narrative and geographical-based data) for use by Hawaiians and other interested parties.**
- **Engage Hawaiians and other cultural practitioners to preserve, restore and reclaim cultural values in a manner consistent with conservation principles and encourage the sustainable use of wetland resources (such as ôpae).**

F. PRIVATE OWNERSHIP/TAKINGS

Conflicts related to ownership, takings and stewardship issues are usually settled on a case-by-case basis. Partnerships and collaborations in wetland management on public and private lands should be encouraged to minimize or prevent these conflicts. The following aspects should be considered when reviewing such issues:

- Ownership of and access to wetlands can be either private or public; but the waters and certain wildlife in wetlands are publicly owned.
- Access for conducting traditional and customary practices, particularly under the PASH decision, should be considered.

  The PASH decision refers to the Hawai'i State Supreme Court decision in "Public Access Shoreline Hawai'i and Angel Pilago v. Hawai'i County Planning Commission and Nansay Hawai'i" 79 Hawai'i 425, 903 P.2d 1246 (1995). While the PASH decision provides guidance on exercising traditional and customary rights protected under the State Constitution (Article XII Sec. 7), it also left unresolved many issues related to access to lands and shorelines for exercising traditional and customary rights. The Hawaiian community is working with many groups within the state to define the ways in which they will exercise their traditional and customary rights. In the meantime, many state agencies lack the resources and expertise to address these issues, and the PASH-related decisions are being made on a case-by-case basis.

- The precautionary principal and the public trust doctrine have been associated in the past with wetlands or other natural and cultural resources issues. Both terms contain legal ramifications and should not be defined outside the context of a specific case. Briefly, the precautionary principal covers uncertainties in the consequences of a proposed action whereas the public trust doctrine covers ownership of resources and allocation of the burden of proof for the uses and allocations of these resources.

G. DISPUTE RESOLUTION

i. Discussion

Through a MOA under CWA Section 404(q), agencies such as the ACOE and EPA have established procedures to minimize delays and resolve disputes in the permitting process. Other agencies also have such procedures in place. Consequently, this policy does not specify the mechanics of how disputes are resolved, but focuses on prevention and points out existing mechanisms for resolving disputes among agencies.

Preventing disputes can be achieved by both effective communication among interested parties and other public outreach efforts as described in Section VIII.A. When disputes are inevitable, the parties should be encouraged to examine all options for resolving the disputes such as:

- Mediation The intervention into a dispute or negotiation by an acceptable, impartial, and/or neutral third party who will assist contending parties negotiate a mutually acceptable settlement of issues in a dispute. The mediator has no decision-making authority.
- Arbitration The intervention into a dispute by an independent, private, and impartial third party who is given the authority by the parties to make a decision on how the conflict will be settled. The arbitrator listens to opposing parties in a dispute and renders a decision for them. Arbitration is private, usually voluntary and decisions are always binding.
- Litigation The submittal of disputes to juries or judges for a verdict or a decision. Attorneys are involved, representing the interest of the representative parties. The issues, relevant facts and applicable law are considered when rendering the verdict or decision. Verdicts and decisions may be appealed.

(Alternative Dispute Resolution website: http://www.hsba.org/ADR/ADRBrochure1.htm)

ii. Policy

- **Prevent or minimize disputes by education, clarifying existing rules and guidelines, proactive planning, and using an effective public participation process. The process shall provide opportunities for all parties or individuals to voice their concerns, not just the most vocal.**
- **Encourage agencies to prevent or resolve conflicts through clarifying appropriate lines of communication, establishing timelines and other accountability mechanisms.**
- **Encourage the use of alternative dispute resolution methods such as mediation, and arbitration to resolve conflicts.**

IX. THE NEXT STEP

Each agency, entity or individual is encouraged to pursue funding for implementing the measures proposed in the policy. Agencies can also establish internal directives to improve the efficiency and effectiveness of their programs. Such pursuits should be coordinated among all stakeholders.

To help implement the above policies, a management manual will be needed. Agencies/entities are encouraged to pursuing funding to build on the accomplishments of the workgroup that were made in 1998 and to update the policy periodically.